



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,299	12/15/2005	Jean-Pierre Joly	9905/34 (BIF023273US)	3881

757 7590 05/11/2009
BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, IL 60610

EXAMINER

ZARNEKE, DAVID A

ART UNIT	PAPER NUMBER
----------	--------------

2891

MAIL DATE	DELIVERY MODE
-----------	---------------

05/11/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,299	Applicant(s) JOLY ET AL.	
	Examiner David A. Zarneke	Art Unit 2891	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 15-17 and 19-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-17 and 19-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The 37 CFR 1.131 declaration filed on 4/24/09 under 37 CFR 1.131 is sufficient to overcome the Kim reference.

As a result of the 37 CFR 1.131 declaration, the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

However, upon further consideration, a new ground(s) of rejection is made below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4, 6, 15, 16, 25 and 26 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Farcy et al., US Patent 6,846,690.

Regarding claims 1 and 15, Farcy teaches a method of fabricating a die (claim 1), and a die fabricated by a method (claim 15), containing an integrated circuit comprising active components and passive components, the method comprising:

producing a first substrate (Figure 2a:[SB1]) including at least one active component (6, 19+) and producing a second substrate (figure 3b:[SB2]) including critical passive components (5, 64+);

bonding the first and second substrates, wherein the bonding comprises performing a layer transfer (figures 4-5P:wherein the SBI and CIT layers are removed to transfer the layers); and

after bonding of the first and second substrates, producing at least one interconnection line [PCT20] between the components of said first and second substrates, said interconnection line passing through the second substrate (figure 5).

With respect to claim 16, Farcy teaches a die containing an integrated circuit comprising active components (6, 19+) and passive components (5, 64+) and including a single stack of layers, wherein said die comprises an interface between two of said layers such that a first portion of the die situated on one side of said interface includes at least one active component of said active components (Figure 2a:[SB1]) and a second portion of said die includes critical passive components of said passive components (figure 3b:[SB2]), the die comprising at least one interconnection line [PCT20] between the components of said first and second portions, said interconnection line passing through the second portion.

As to claim 4, Farcy teaches at least one capacitor or at least one MEMS (2, 55+).

As to claim 6, Farcy teaches producing said second substrate comprises producing an electrically conductive material (wherein the interconnection lines [PCT20 are electrically conductive).

In re claims 25 and 26, Farcy teaches said active components are disposed in a vicinity of a first face of said die and said die further comprises at least one interconnection line that emerges in the vicinity of said face of said die opposite said first face (figure 5:[PCT20]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2, 3, 5, 7-13, 17, 19-24, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farcy et al., US Patent 6,846,690, as applied to claims 1 and 16 above.

Art Unit: 2891

Regarding claim 2, while Farcy fails to teach said at least one active component comprises transistors, it would have been obvious to one of ordinary skill in the art at the time of the invention to use transistors as the active components in the invention of Farcy because transistors are commonly known and used active components known to every skilled artisan. The use of conventional materials to perform their known functions is obvious (MPEP 2144.07).

With respect to claims 3 and 17, while Farcy fails to teach said critical passive components comprise: (1) at least one capacitor and at least one microelectromechanical system (MEMS) (claim 3), or (2) at least one capacitor and at least one MEMS enclosed in a cavity situated inside said die, it would have been obvious to one of ordinary skill in the art at the time of the invention to use capacitors and MEMS as the passive components in the invention of Farcy because capacitors and MEMS are commonly known and used passive components known to every skilled artisan. The use of conventional materials to perform their known functions is obvious (MPEP 2144.07).

As to claims 5 and 19, while Farcy fails to teach wherein a dielectric material of said at least one capacitor comprises a perovskite, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a capacitor comprising a perovskite as the passive components in the invention of Farcy because capacitors comprising a perovskite are commonly known and used passive components known to every skilled artisan. The use of conventional materials to perform their known functions is obvious (MPEP 2144.07).

In re claim 7, while Farcy fails to teach producing said second substrate comprises producing a dielectric material, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a dielectric material in the second substrate in the invention of Farcy because a dielectric material in the second substrate is commonly known and used by every skilled artisan. The use of conventional materials to perform their known functions is obvious (MPEP 2144.07).

Regarding claim 8, while Farcy fails to teach producing said second substrate comprises producing perovskite, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a perovskite in the second substrate in the invention of Farcy because a perovskite in the second substrate is commonly known and used by every skilled artisan. The use of conventional materials to perform their known functions is obvious (MPEP 2144.07).

With respect to claims 9 and 20, while Farcy fails to teach producing dielectric insulation trenches in said second substrate during the production of said second substrate, it would have been obvious to one of ordinary skill in the art at the time of the invention to use dielectric insulation trenches in said second substrate in the invention of Farcy because dielectric insulation trenches in said second substrate are commonly known and used by every skilled artisan. The use of conventional materials to perform their known functions is obvious (MPEP 2144.07).

As to claims 10 and 21, while Farcy fails to teach producing at least one non-critical passive component during the production of said second substrate, it would have been obvious to one of ordinary skill in the art at the time of the invention to use at least

Art Unit: 2891

one non-critical passive component during the production of said second substrate in the invention of Farcy because at least one non-critical passive component during the production of said second substrate is commonly known and used by every skilled artisan. The use of conventional materials to perform their known functions is obvious (MPEP 2144.07).

In re claims 11 and 22, while Farcy fails to teach producing the non-critical passive component comprises producing a capacitor in trenches, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a capacitor in trenches as the non-critical passive component in the invention of Farcy because a capacitor in trenches is a commonly known and used non-critical passive component to every skilled artisan. The use of conventional materials to perform their known functions is obvious (MPEP 2144.07).

Regarding claims 12 and 23, while Farcy fails to teach producing at least one inductor in the vicinity of a face of the second substrate opposite a bonding face after said bonding of the two substrates, it would have been obvious to one of ordinary skill in the art at the time of the invention to use at least one inductor in the vicinity of a face of the second substrate opposite a bonding face after said bonding of the two substrates in the invention of Farcy because at least one inductor in the vicinity of a face of the second substrate opposite a bonding face after said bonding of the two substrates is a commonly known and used passive component to every skilled artisan. The use of conventional materials to perform their known functions is obvious (MPEP 2144.07).

With respect to claims 13 and 24, while Farcy fails to teach producing said at least one inductor on said dielectric insulation trenches, it would have been obvious to one of ordinary skill in the art at the time of the invention to use at least one inductor on said dielectric insulation trenches in the invention of Farcy because at least one inductor on said dielectric insulation trenches is a commonly known and used passive component to every skilled artisan. The use of conventional materials to perform their known functions is obvious (MPEP 2144.07).

As to claim 27, while Farcy fails to teach said at least one inductor and at least one of said interconnection lines are produced during a same process step, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the at least one inductor and at least one of said interconnection lines during a same process step in the invention of Farcy because the performance of two steps simultaneously, which have previously been performed in sequence was held to have been obvious [In re Tatincloux 108 USPQ 125 (CCPA 1955)].

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

Art Unit: 2891

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Zarneke whose telephone number is (571)-272-1937. The examiner can normally be reached on M-Th 7:30 AM-6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kiesha Rose can be reached on (571)-272-1844. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/561,299
Art Unit: 2891

Page 10

/David A. Zarneke/
Primary Examiner, Art Unit 2891
5/2/09